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EXAMINER

WONG, BLANCHE

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/668,648	Applicant(s) KARAOGUZ, JEYHAN	
	Examiner Blanche Wong	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-84 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-47** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "... specific PN code assignment to minimize narrowband interference ... (... different devices using different PN codes) ...

Appropriately assigned PN codes are employed to support the communication across the various communication links between the PNC and the various DEVs. ... The various PN codes include PN sequences that include strategically placed zeroes that are operable to effectively null portions of the UWB spectrum as to substantially eliminate the narrowband interference therein ... the interference ... is substantially centered around approximately 2.4 GHz ... Therefore, ... the communication link between the DEV 1 and the PNC includes a PN sequence that substantially nulls the UWB signal around approximately 2.4 GHz" (p.16, lines 10-29), does not reasonably provide enablement for "... each DEV of the plurality of DEVs and the PNC is operable to communicate with one another using UWB pulses; based on narrowband interference

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within a spectrum of the UWB pulses that are transmitted across a communication link within the piconet, the PNC assigns a PN code from a plurality of PN codes to spread the UWB pulses transmitted across the communication link; the assigned PN code has at least one narrowband blocking interval that substantially nulls at least one portion of the spectrum of the UWB pulses around which the narrowband interference is substantially centered thereby substantially eliminating the narrowband interference ..." (claim 1). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

For example, Specification discloses PN codes are assigned to minimize narrowband interference and to support communication across the communication links between the PNC and the DEVs. However, claim 1 recites "a PN code ... to spread the UWB pulses transmitted across the communication link" in lines 10-11 and "a communication link within the piconet" in line 9. Specification also discloses to null portions of the UWB spectrum to substantially eliminate the narrowband interference by strategically placing zeroes in PN sequences of PN codes. However, claim 1 merely recites "... the assigned PN code has at least one narrowband blocking interval that substantially nulls at least one portion of the spectrum of the UWB pulses ..." This limitation is vague and indefinite with regard to the meaning of nulling. As a matter of fact, to null can even be interpreted broadly as blocking based on the claim recitation. Lastly, Specification does not disclose any UWB pulses. However, claim 1 is confusing to recite "each DEV of the plurality of DEVs and the PNC is operable to communicate

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with one another using UWB pulses" in lines 6-7 and "assigns a PN code ... to spread the UWB pulses transmitted across the communication link" in lines 10-11, and then repeats "when transmitting a UWB pulse across the communication link [which communication link? Is this the same as communicating with UWB pulses?], at least one of a DEV of the plurality of DEVs and the PNC spreads the UWB pulses using the assigned PN code" in lines 16-18.

Claims 2-20 depend from rejected claim 1.

Claim 21 is rejected similarly to claim 1.

Claims 22-35 depend from rejected claim 21.

Claim 36 is rejected similarly to claim 1.

Claims 37-47 depend from rejected claim 36.

4. **Claims 56-84** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "... specific PN code assignment to minimize narrowband interference ... (... different devices using different PN codes) ...

Appropriately assigned PN codes are employed to support the communication across the various communication links between the PNC and the various DEVs. ... The various PN codes include PN sequences that include strategically placed zeroes that are operable to effectively null portions of the UWB spectrum as to substantially eliminate the narrowband interference therein ... the interference ... is substantially centered around approximately 2.4 GHz ... Therefore, ... the communication link between the DEV 1 and the PNC includes a PN sequence that substantially nulls the

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UWB signal around approximately 2.4 GHz" (p.16, lines 10-29), does not reasonably provide enablement for "assigning a PN code that is operable to spread UWB pulses that are transmitted across a communication link ... using the PN code, substantially nulling at least a portion of a spectrum of the UWB pulses; ... operating the communication link ... using the assigned PN code" (claim 56). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Specification discloses PN codes are assigned to minimize narrowband interference and to support communication across the communication links between the PNC and the DEVs. However, claim 56 recites "a PN code ... to spread the UWB pulses transmitted across the communication link". Specification also discloses to null portions of the UWB spectrum to substantially eliminate the narrowband interference by strategically placing zeroes in PN sequences of PN codes. However, claim 56 merely recites "... substantially nulls at least one portion of the spectrum of the UWB pulses ...". This limitation is indefinite with regard to the meaning of nulling a spectrum and how to null a spectrum. Lastly, Specification does not disclose any UWB pulses. However, claim 56 is confusing to recite "assigning a PN code that is operable to spread UWB pulses that are transmitted across a communication link ... " in lines 2-3, and then repeats the limitation "operating the communication link that communicatively couples two devices using the assigned PN code" in lines 9-10.

Claims 57-68 depend from rejected claim 56.

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Claim 69 is rejected similarly to claim 56.

Claims 70-76 depend from rejected claim 69.

Claim 77 is rejected similarly to claim 56.

Claims 78-84 depend from rejected claim 77.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1-84** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is assuming that "each DEV of the plurality of DEVs and the PNC is operable to communicate with one another using UWB pulses" in lines 6-7 is "across a communication link within the piconet" in line 9.

With regard to claim 1, it is unclear what is meant by "nulls ... the spectrum of the UWB pulses ..." in line 13, or whether it means cancelling, blocking, etc.

With regard to claim 1, it is unclear what is meant by "the narrowband interference is substantially centered" in line 14 because how does one centers interference. One can center a frequency, but not interference.

With regard to claim 6, it is unclear which is "the transmitted UWB pulse" in line 6 because "the PNC transmits UWB pulses" in line 2 and "the plurality of DEVs transmits a UWB pulse" in lines 3-4.

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With regard to claim 8, it is unclear what is the relativity of "relative position" in line 3. For example, claim 6, line 5, recites "the relative position of each DEV within the plurality of DEVs" and line 7 recites "the relative distance between the PNC and each DEV". Claim 8, line 8, recites "the relative distance between the two DEVs to the PNC", line 9 recites "the relative distance between the PNC and the two DEVs", and line 11 recites "the relative distance between the two DEVs".

With regard to claim 21, it is unclear which is "the transmitted UWB pulse" in line 13 because "the PNC transmits UWB pulses" in line 8 and "the plurality of DEVs transmits a UWB pulse" in line 11.

With regard to claim 21, it is unclear what is meant by "nulls ... the spectrum of the UWB pulses ..." in line 22, or whether it means cancelling, blocking, etc.

With regard to claim 21, it is unclear what is meant by "the narrowband interference is substantially centered" in line 23 because how does one centers interference. One can center a frequency, but not interference.

With regard to claim 26, it is unclear what is the relativity of "relative position" in line 3.

With regard to claim 36, it is assuming that "each DEV of the plurality of DEVs and the PNC is operable to communicate with one another using UWB pulses" in lines 6-7 is "across a communication link within the piconet" in line 9.

With regard to claim 36, it is unclear what is meant by "nulls ... the spectrum of the UWB pulses ..." in line 13, or whether it means cancelling, blocking, etc.

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With regard to claim 36, it is unclear what is meant by "the narrowband interference is substantially centered" in line 14 because how does one centers interference. One can center a frequency, but not interference.

With regard to claim 40, it is unclear which is "the transmitted UWB pulse" in line 6 because "the PNC transmits UWB pulses" in line 2 and "the plurality of DEVs transmits a UWB pulse" in lines 3-4.

With regard to claim 42, it is unclear what is the relativity of "relative position" in line 3.

With regard to claim 48, it is assuming that "each DEV of the plurality of DEVs and the PNC is operable to communicate with one another using UWB pulses" in lines 7-8 is "across a communication link within the piconet" in line 10.

With regard to claim 48, it is unclear what is meant by "nulls ... the spectrum of the UWB pulses ..." in line 14, or whether it means cancelling, blocking, etc.

With regard to claim 56, it is unclear what is meant by "nulling ... the spectrum of the UWB pulses ..." in line 6, or whether it means cancelling, blocking, etc.

With regard to claim 69, it is unclear what is meant by "nulling ... the spectrum of the UWB pulses ..." in line 6, or whether it means cancelling, blocking, etc.

With regard to claim 77, it is unclear what is meant by "nulling ... the spectrum of the UWB pulses ..." in line 8, or whether it means cancelling, blocking, etc.

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Allowable Subject Matter

7. Claim 48 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. Claims 49-55 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/
Examiner, Art Unit 2619
August 29, 2008

***/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619***